

CLAIMS

1. An alkaline pH, free solution capillary electrophoresis method for analyzing a clinical sample comprising protein constituents said method comprising: introducing said clinical sample into a capillary tube containing a buffer system wherein said buffer system comprises a biological buffer with a pKa at 25°C in the range 8.8 to 10.7 and at least one additive that increases the ionic strength of said buffer system.
2. The method of claim 1, which further comprises separating said protein constituents by migration and detecting said protein constituents.
3. The method of claim 1, wherein the clinical sample is serum, plasma, hemolyzed blood, urine or cerebrospinal fluid.
4. The method of claim 1, wherein said protein constituents are blood proteins.
5. The method of claim 1, wherein said protein constituents are selected from albumin or α_1 -globulin, α_2 -globulin, β -globulin, β_1 -globulin, β_2 -globulin and γ -globulin.
6. The method of claim 1, wherein biological buffer is selected from 2-amino-2-methyl-1,3-propanediol (AMPD), N-tris(hydroxymethyl)methyl-4-aminobutanesulphonic acid (TABS), 3-[(1,1-dimethyl-2-hydroxyethyl)amino]-hydroxypropanesulphonic acid (AMPSO), 2-(N-cyclohexylamino)ethanesulphonic acid (CHES), 3-(cyclohexylamino)-2-hydroxy-1-propanesulphonic acid (CAPSO), 2-amino-2-methyl-1-propanol (AMP), 3-cyclohexylamino-1-propanesulphonic acid (CAPS) and 4-(cyclohexylamino)-1-butanesulphonic acid (CABS).
7. The method of claim 1, wherein the biological buffer is selected from 2-amino-2-methyl-1,3-propanediol (AMPD), N-tris(hydroxymethyl)methyl-4-aminobutanesulphonic acid (TABS), 3-[(1,1-dimethyl-2-hydroxyethyl)amino]-hydroxypropanesulphonic acid (AMPSO), 2-(N-cyclohexylamino)ethanesulphonic acid (CHES), 3-(cyclohexylamino)-2-hydroxy-1-propanesulphonic acid (CAPSO), 2-amino-2-methyl-1-propanol (AMP), 3-

cyclohexylamino-1-propanesulphonic acid (CAPS) and 4-(cyclohexylamino)-1-butan sulphonic acid (CABS).

8. The method of claim 1, wherein the biological buffer is selected from 3-cyclohexylamino-1-propanesulphonic acid (CAPS), 3-(cyclohexylamino)-2-hydroxy-1-propanesulphonic acid (CAPSO) and 4-(cyclohexylamino)-1-butan sulphonic acid (CABS).
9. The method of claim 1, wherein the biological buffer is 3-cyclohexylamino-1-propanesulphonic acid (CAPS).
10. The method of claim 1, wherein said biological buffer in the buffer system has a concentration in the range of 10 to 500 mM.
11. The method of claim 1, wherein said biological buffer in said buffer system has a concentration of more than 20 and less than 200 mM.
12. The method of claim 1, wherein said additive that increases the ionic strength of said buffer system is selected from alkali metal chlorides, sulphates, sulphonates, carboxylates, fluorides, carbonates, phosphates, and mixtures thereof.
13. The method of claim 1, wherein said additive that increases the ionic strength of said buffer system is selected from alkali metal chlorides, sulphates, sulphonates, carboxylates, oxides, and mixtures thereof.
14. The method of claim 1, wherein said additive that increases the ionic strength of said buffer system is a chloride, sulphate or sulphonate.
15. The method of claim 1, wherein the additive that increases the ionic strength of said buffer system is sodium sulphate.
16. The method of claim 1, wherein said additive that increases the ionic strength of said buffer system and has a concentration in the range of 10 to 500 mM.
17. The method according to claim 1, wherein said additive increases the ionic strength of an electrolyte and has a concentration of more than 50 and less than 200 mM.

18. The method according to claim 1, wherein said buffer system further comprises at least one buffer component selected from C₆ to C₂₂ alkyl-mono-, di- or tri- sulphonates, C₆ to C₂₂ alkylmono-, di- or tri-carboxylates, and C₆ to C₂₂ alkylcarboxysulphonates.
19. The method according to claim 1, wherein said buffer system further comprises a C₆ to C₁ alkylsulphonate.
20. The method according to claim 1, wherein said buffer system further comprises octanesulphonate.
21. The method according to claim 19, wherein said alkylsulphonate has a concentration in the range 1 to 5 mM.
22. The method according claim 1, wherein said biological buffer has a pH in the range 9 to 11.
23. The method according claim 22, wherein the pH of said buffer is about 10.
24. The method according to claim 1, wherein the capillary tube is produced from fused silica.
25. The method according to claim 1, wherein said buffer system further comprises at least one pH-modifier.